



## Authorizations and Permits for Protected Species (APPS)

File #: 16253

Title: Application for a scientific research and enh

Modification: 1

### Applicant Information

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### Project Information

**File Number:** 16253

**Application Status:** **Application Complete**

**Project Title:** Application for a scientific research and enhancement permit under the ESA; development and testing of gear aboard commercial fishing vessels.

**Project Status:** New

**Previous Federal or State Permit:** 1570

**Permit Requested:**

- ESA Section 10(a)(1)(A) permit (other)

**Where will activities occur?** Foreign Countries including territorial waters  
International waters  
US Locations including offshore waters

**Research Timeframe:** **Start:** 01/12/2012 **End:** 01/31/2017

**Sampling Season/Project Duration:** The sampling will be conducted year round for a 5-year period.

**Abstract:** The purpose of the research is to evaluate modifications to commercial fishing gear to mitigate sea turtle interactions and capture under two projects, Project A (Turtle Excluder Device (TED) Evaluations in Atlantic and Gulf of Mexico Trawl Fisheries) and Project B (Modifications to Longline Fisheries Gear). These evaluations and subsequent gear modifications could help to reduce incidental turtle bycatch in the gear types studied. The research would also provide new data to improve stock assessments, assess the impact of anthropogenic activities, better manage, and recover these species. Under Project A, we request the following annual take numbers: 225 (70 of these captures) loggerheads (*Caretta caretta*), 98 (20 captures) Kemp's ridleys (*Lepidochelys kempii*), 82 (18 captures) leatherbacks (*Dermochelys coriacea*), 47 (12 captures) greens (*Chelonia mydas*), 33 (10 captures) hawksbills (*Eretmochelys imbricata*), 33

(10 captures) olive ridleys (*Lepidochelys olivacea*), and 85 (28 captures) unidentified/hybrid turtles. A subset of these animals will be captured during trawl research authorized under this permit; the rest of the turtles will be captured within fisheries managed by Federal authority. Under Project B, we request the following annual take numbers: 28 loggerheads, 3 Kemp's ridleys, 30 leatherbacks, 4 greens, 4 hawksbills, 3 olive ridleys, and 3 unidentified/hybrid turtles. Animals will be handled, measured, weighed, photographed, flipper tagged, passive integrated transponder tagged, skin biopsied, and released. The research will be conducted for five years in waters of the Atlantic Ocean, Gulf of Mexico, Caribbean Sea and their tributaries; there is also the potential to work in offshore waters, international waters, and foreign countries including territorial waters.

Project Description

**Purpose:** Project A: Turtle Excluder Device (TED) Evaluations in Atlantic and Gulf of Mexico Trawl Fisheries

The objective of the proposed research is to develop TEDs for trawl gear types used along the Atlantic coast and the Gulf of Mexico of the U.S. that are either not subject to the TED requirement or are required to use TEDs but may need additional studies directed at improving TED efficiency for turtle exclusion or target catch retention. These fisheries are prosecuted within the migratory path of leatherbacks, loggerheads, greens, and Kemp's ridley sea turtles during seasons when turtles are likely to be present. Although all trawl fisheries may be evaluated, research will focus on the following:

Mid-Atlantic Region

Flynet Fishery & High Opening Bottom Trawl

The flynet fishery is a multispecies fishery composed of offshore and nearshore elements that operate along the East Coast of the U.S. The nearshore fishery operates from October through April within 60 meters of the coast from North Carolina to New Jersey and targets Atlantic croaker, weakfish, butterfish, harvestfish, bluefish, menhaden, striped bass, and kingfishes. The offshore fishery operates from November through April outside 60 meters from the Hudson Canyon off New York, south to Hatteras Canyon off North Carolina. Target species for the offshore fishery include bluefish, Atlantic mackerel, squid, black sea bass, and scup; squid are also targeted offshore (130-365 meters) during summer months from May through September.

Development of a TED for the nearshore flynet fishery has been ongoing since 2001 under the existing ESA permits #1260 and #1570. A flexible "cable TED" has been developed and tested for target fish retention. Based on the success of the work to date, implementation of a TED requirement for this fishery is likely in the short term. However, additional testing needs to be conducted to test the feasibility of new designs or design modifications. Proposed research under this permit would test TED prototype designs aboard vessels fishing in nearshore areas. Additional TED feasibility research may include those fisheries employing other high opening bottom trawl designs which target scup, black sea bass and inshore aggregations of Loligo squid.

Crab Trawl Fishery

The crab trawl fishery primarily operates in inshore waters of North Carolina from October through November and March through June. The fishery is not subject to TED requirements. Work under this project may investigate the feasibility of TED use in these gear types. Qualitative and quantitative assessments may be conducted aboard commercial vessels to assess the effect of TEDs on the CPUE of crabs.

Shrimp Trawl Fishery

While the shrimp trawl fishery in the Atlantic is subject to the TED requirement, future work under this project may require evaluations of modifications to TEDs which may improve turtle exclusion and or shrimp retention. Such research may require comparison tows between modified and unmodified TEDs to assess differences in shrimp CPUE. Assessments of TEDs which have been modified to improve sea turtle exclusion may require qualitative work using cameras installed in and around the TED to observe turtle exclusion efficiency.

Skimmer trawls

Skimmer trawls, are not currently subject to the TED requirement. Work under this project may investigate the feasibility of TED use in these gear types. Qualitative and quantitative assessments may be conducted aboard commercial vessels to assess the effect of TEDs on the CPUE of shrimp.

Gulf of Mexico

Shrimp Trawl Fishery

While the shrimp trawl fishery in the Gulf of Mexico is subject to the TED requirement, future work under this project may require evaluations of modifications to TEDs which may improve turtle exclusion and or shrimp retention. Such research may require comparison tows between modified and unmodified TEDs to assess differences in shrimp CPUE. Assessments of TEDs which have been modified to improve sea turtle exclusion may require qualitative work using cameras installed in and around the TED to observe turtle exclusion efficiency.

#### Skimmer trawls and Butterfly nets

Skimmer trawls and butterfly nets are not currently subject to the TED requirement. Work under this project may investigate the feasibility of TED use in these gear types. Qualitative and quantitative assessments may be conducted aboard commercial vessels to assess the effect of TEDs on the CPUE of shrimp.

#### Groundfish Fishery

The Gulf of Mexico groundfish fishery is limited in effort at the present time; however, this fishery is currently exempt from TEDs. Future work under this project may require an investigation of the feasibility of TED use in this fishery. Qualitative and quantitative assessments may be conducted aboard commercial vessels to assess the effect of TEDs on the CPUE of targeted groundfish species.

#### Project B: Modifications to Longline Fisheries Gear

The objective of the proposed research is to develop sea turtle bycatch mitigating gear modifications in the pelagic and bottom longline fisheries along the U.S Atlantic coast and the Gulf of Mexico. These fisheries are prosecuted within the migratory path of leatherbacks, loggerheads, greens, and Kemp's ridley sea turtles during seasons when turtles are likely to be present.

In order for these fisheries to continue to operate, it is imperative that mitigation measures be developed to reduce the impact of longline gear on endangered and threatened sea turtle species. The research proposed also includes the development and evaluation of mitigation techniques including the introduction of safe handling and release equipment to safely release sea turtles and other bycatch species in all fisheries. Research will involve testing of modified hook designs such as circle hooks and/or bait and baiting techniques and other gear modifications and changes in fishing tactics in pelagic and bottom longline fisheries and other hook and line fisheries as directed to evaluate potential for reducing bycatch species and incidental takes of sea turtles and marine mammals.

**Description:** Project A: Turtle Excluder Device (TED) Evaluations in Atlantic and Gulf of Mexico Trawl Fisheries

The scope of work for this project in both the Atlantic and Gulf of Mexico will include; installation of approved and prototype TED designs aboard commercial trawlers which may be single or double rigged; installation of underwater video cameras or sonar transducers on the trawl to observe the behavior of turtles and their ability to escape through the TED and; comparative assessments of the target catch from control (no TED) and experimental (TED equipped) trawls to determine the loss/gain associated with TED use. Cameras and or sonar gear will be used during some trips to detect the escapement of fish or invertebrates through the TED escape opening during fishing operations. A detailed description of the gear types is included in the methods sections.

The proposed project will begin on January 1, 2012 and will be completed on December 31, 2017. Locations of Atlantic coast work for Project A will be in inshore bays and estuaries, nearshore waters (? 10 fm) and offshore waters of the EEZ from Cape Canaveral, Florida, northward to the New York/Connecticut border. Because the work will be fishery dependent, specific areas of operation and, thus, locations of takes, will be determined by the location of target catch aggregations at the time of a given trip. Points of embarkation and disembarkation aboard commercial fishing vessels used in conducting project work will include Cape Canaveral, FL; Mayport, FL; Brunswick, GA; Charleston, SC; Beaufort, NC; Wanchese, NC; Chincoteague, VA; Newport News, VA; Barnegat Light, NJ; Cape May, NJ; Shinnecock, NY; Point Judith, RI and Gloucester, MA.

For Gulf of Mexico fisheries, project operations may be conducted in inshore bays and estuaries, nearshore waters (< 10 fm) and offshore waters (> 10 fm) from Key West, Florida to Brownsville, Texas. Project operations may be conducted year-round (January-December). Points of embarkation and disembarkation aboard commercial fishing vessels in the Gulf of Mexico include; Key West, Fort Meyers, and Tampa in Florida, Bon Secour and Bayou La Batre in Alabama, Pascagoula and Biloxi in Mississippi, Grand Isle, Morgan City and Cameron in Louisiana, Galveston, Freeport, Palacios, Aransas Pass and Brownsville in Texas.

In federal fisheries, researchers will fish gear within fishery guidelines, and all captures of sea turtles will occur in the fishery and are authorized by the ITS of the biological opinion done for the fishery. This includes shrimp fishery in state waters covered by Federal shrimp fishery regulations. In some cases the provision (50 CFR § 223.207) for use of experimental TEDs in shrimp trawl gear will be applied. In state waters, researchers are contracting vessels and will conduct experimental trawling on these vessels in state waters, and the capture of the turtles via trawling is requested under the authority of this permit. Requested take numbers include observed captures in control trawls, those turtles that are captured in the experimental trawls with TEDs, as well as estimated number of turtles that will pass through the experimental trawls with TEDs but not be captured (researchers will record the uncaptured turtles by video as they pass through the net).

We expect to handle and sample juvenile, subadults, and adults of both sexes captured under the authority of federal fisheries not to exceed: 155 loggerheads (*Caretta caretta*), 78 Kemp's ridleys (*Lepidochelys kempii*), 64

leatherbacks (*Dermochelys coriacea*), 22 greens (*Chelonia mydas*), 23 hawksbills (*Eretmochelys imbricata*), 23 olive ridleys (*Lepidochelys olivacea*), and 37 unidentified/hybrid turtles. We expect to capture in state waters sub adults & adults of both sexes not expected to exceed: 70 loggerheads, 20 Kemp's ridleys, 12 greens, 18 leatherback, 10 hawksbill, 10 olive ridley sea turtles, and 28 unidentified sea turtles. Lethal takes are not expected to occur; however, in the rare event that lethal takes occur, they will not exceed 3 loggerheads, 2 Kemp's ridleys, 2 greens, 1 leatherback, 1 hawksbill, and 1 olive ridley/hybrid for the duration of the permit. All turtles are expected to be captured only once and all turtles will be handled and sampled in accordance with the methods in NMFS-SEFSC-TM-579 SEFSC Sea Turtle Research Techniques Manual (SEFSC 2008a).

Sample size:

Our research requires us to test sea turtle bycatch mitigation measures, such as TEDs, in the various fisheries listed in the permit. Sea turtle bycatch levels are unknown for some of these fisheries as well as the level of sampling required to effectively test turtle mitigation measures. Although we have not fully utilized the requested take numbers authorized under Permit No. 1570, are asking for the same level of takes because we are proposing to work in several fisheries not previously listed. In addition, these fisheries operate in areas that were not sampled previously. We think the proposed level of takes reasonable and necessary to ensure that potential testing in these fisheries can be conducted effectively without compromising the quality of the research.

Project B: Modifications to Longline Fisheries Gear

This project will involve fishery dependent evaluations of modifications to longline fisheries, concentrating on pelagic and bottom longline gear designed to mitigate sea turtle interactions and reduce the incidental bycatch and mortality of white marlin, blue marlin, sailfish, bluefin tuna, undersize swordfish and marine mammals in the Southeastern Atlantic and Gulf of Mexico. We propose to evaluate circle hook and bait type combinations in the bottom longline shark fishery, examining the potential of these techniques in reducing sea turtle interactions and serious injury or mortality while maintaining target catch effectiveness. We also propose to investigate the development of other techniques, including alternative hook types, for reducing sea turtle interactions in the bottom longline shark fishery, reef fish fishery, mahi-mahi fishery and pelagic longline fishery, and recreational fisheries. We will also develop and conduct technology transfer training programs that provide fishers with information and training regarding gear handling techniques, safe turtle release equipment, and protocols that deal with protected species interactions.

The scope of work for this project in both the Atlantic and Gulf of Mexico will include; development and evaluation of mitigation techniques including the introduction of safe handling and release equipment to safely release sea turtles and other bycatch species in all fisheries aboard commercial fishing vessels. Research will involve testing of modified hook designs, i.e., circle hooks and/or bait and baiting techniques, and other gear modifications and changes in fishing tactics in pelagic and bottom longline fisheries as directed to evaluate potential for reducing bycatch species and incidental takes of sea turtles and marine mammals.

The proposed project will begin on January 1, 2012 and will be completed on December 31, 2017. Locations for Project B will be in the coastal and offshore waters of the Western Atlantic Ocean, Gulf of Mexico, and Caribbean Sea. Because the work will be fishery dependent, specific areas of operation and, thus, locations of takes will be determined by the location of target catch aggregations at the time of a given trip.

We expect to take juveniles, subadults, and adults of both sexes with live takes not expected to exceed 28 loggerheads, 3 Kemp's ridleys, 4 greens, 30 leatherback, 4 hawksbill, 3 olive ridley and 3 unknown/hybrid turtles. All turtles are expected to be captured only once and all turtles will be handled and sampled in accordance with the methods in NMFS-SEFSC-TM-579 SEFSC Sea Turtle Research Techniques Manual (SEFSC 2008a). No lethal take is expected in this project.

Methods

Capture:

Project A: Turtle Excluder Device (TED) Evaluations in Atlantic and Gulf of Mexico Trawl Fisheries (Table 1)

Turtles taken during this project will be captured by bottom or skimmer trawling gear set for fish or shellfish in the mid-Atlantic and Gulf of Mexico. During trawl sets to evaluate experimental TED installation, the incidental capture of sea turtles will be highly unlikely, as the experimental TED will incorporate the minimum required opening dimensions for offshore waters, i.e., those large enough to exclude leatherback sea turtles. In some instances, trawls may be set without TEDs as a means of comparing target catch rates to sets made with a TED. Trawl sets made without TEDs have the potential to capture sea turtles. Turtles may be captured by bottom trawls while foraging or resting on the bottom or in the water column as a bottom trawl as it is deployed or retrieved. NOAA divers involved in TED development have observed the behavior of sea turtles overtaken by trawls. In some instances, captured turtles may be capable of out swimming a trawl and escaping. More likely, turtles that are overtaken actively seek an escape, moving from side to side in the trawl, making contact with the trawl webbing. As the turtle tires, it cannot keep pace with the trawl movement and steadily falls toward the codend section or bag, where it will remain until the trawl is retrieved. When a turtle is captured, its presence in the trawl may not be noted until after the trawl has been retrieved in its entirety and the catch is removed, or dumped, on the deck of the vessel. The turtle will likely be mixed in with substantial amounts of fishery target

catch.

As a component of this project, some fishery independent trawling is expected to be conducted. This work will involve the use of a NOAA research vessel or a chartered commercial trawler to investigate candidate TED efficiency in excluding sea turtles. This work is conducted by mounting underwater cameras on a trawl in and around the candidate TED as a means of obtaining video of wild turtle escapement. This work will be conducted in a limited number of locations which are known to have high sea turtle abundance during certain times of the year. These locations include the Cape Canaveral, Florida shipping channel and the offshore waters of the States of Georgia and South Carolina. Work may be conducted from October through April. Trawl types which may be used for this work include; traditional 2 and 4 seam shrimp trawls with headrope lengths up to 70 ft.; flounder trawls with headrope lengths up to 120 ft.; fly nets with headrope lengths up to 150 ft. and skimmer trawls with a headrope length up to 30 ft.

The species of turtles that could be taken during this project include loggerhead (*Caretta caretta*), green (*Chelonia mydas*), leatherback (*Dermochelys coriacea*), Kemp's ridley (*Lepidochelys kempii*), hawksbill (*Eretmochelys imbricata*) and olive ridley (*Lepidochelys olivacea*). The proposed research will occur in the Western Atlantic from Southern Florida to New York in water depths ranging from 40 to 200 m. Turtles taken during this project will be captured by bottom or midwater trawling gear set for fish or shellfish. During trawl sets to evaluate experimental TED installation, the incidental capture of a sea turtle will be highly unlikely, as the experimental TED will incorporate the minimum required opening dimensions for offshore waters (i.e., those large enough to exclude leatherback sea turtles). During trawl sets in which a TED is not installed in the trawl (i.e., tows to assess target catch rates without a TED), one of two methods to ensure a non-lethal turtle interaction will be employed. Method 1 will involve a tow time limitation. Method 2 will involve the use of a real time video monitoring system that will allow the researchers to know when a turtle enters the codend section of the trawl.

In state waters with contracted vessels, all captures will be covered by this permit and not the ITS of the Biological Opinion. In these cases, trawl gear without TEDs will be towed for no longer than 30 minutes unless specific fisheries regulations exist requiring tow time limits in lieu of TEDs. In these cases, tow time limits will match those set by regulations such as the skimmer trawl fishery which has a 55 min tow time limit. Testing must be conducted under commercial conditions and shorting tow time limits would potentially bias results of the testing. As an alternative, real-time video camera may be used to observe the capture of animals, and the researchers will remove turtles from the nets within 20 minutes of capture. Trawling will not be initiated when marine mammals (with the exception of dolphins or porpoises) are observed in the vicinity, and the researchers will make every effort to prevent interactions with all marine mammals.

These trawls have the potential to catch the following species:

#### Incidental Harassment:

Based on 3 years of conducting TED testing aboard inshore commercial skimmer trawl vessels in North Carolina, Mississippi, and Alabama we estimate that in addition to sea turtles, commercial skimmer trawls used to conduct research in North Carolina, Mississippi, Alabama, and Louisiana will capture (over the entire 5 year duration of the permit) ~ 4,000,000 penaeids (shrimp) ~ 1,600,000 sciaenids (drums), ~ 200,000 triglids (sea robins), ~ 400,000 bothids (flounders), ~ 20,000 charcharinids (sharks), ~ 20,000 dasyatids (rays), ~ 20,000 mylobatids (rays), ~1,200,000 clupeids (shad), ~200,000 engraulids (anchovies), ~20,000 synodontids (lizardfish), ~400,000 ariids (catfish), ~20,000 lutjanids (snappers), ~40,000 ehippids (spadefish), ~ 80,000 carangids (jacks), ~ 40,000 sculdids (mantis shrimps), ~ 20,000 portunids (blue crabs), ~ 800,000 ctenophoras (comb jellies), ~ 400,000 pelagiids (sea nettles), and ~ 400,000 ulmarids (moon jellies) during the 5 year period. The shrimp will be retained by the vessel for sale and the rest of the catch will be discarded. Since skimmer trawls are a towed or pushed gear, we expect mortality associated with this gear to be high. However, all efforts will be made to return bycatch to the water as quickly as possible, maximizing the chances for survival.

In addition to skimmer trawls, TEDs will also be tested in the inshore crab trawl fishery in North Carolina. Testing will be conducted aboard contract commercial vessels and we estimate that in addition to sea turtles, commercial crab trawls used to conduct research will capture (over the entire 5 year duration of the permit) ~ 200,000 portunids (blue crabs), ~ 320,000 sciaenids (drums), ~ 40,000 triglids (sea robins), ~ 320,000 bothids (flounders), ~ 4,000 charcharinids (sharks), ~ 4,000 dasyatids (rays), ~ 4,000 mylobatids (rays), ~480,000 clupeids (shad), ~40,000 engraulids (anchovies), ~4,000 synodontids (lizardfish), ~4,000 ehippids (spadefish), ~ 4,000 carangids (jacks), ~ 2,000 sculdids (mantis shrimps), ~ 160,000 ctenophoras (comb jellies), and ~ 80,000 pelagiids (sea nettles), during the 5 year period. The crabs will be retained by the vessel for sale and the rest of the catch will be discarded. Since crab trawls are a towed gear, we expect mortality associated with this gear to be high. However, all efforts will be made to return bycatch to the water as quickly as possible, maximizing the chances for survival.

Finally, traditional shrimp trawl TED testing will be conducted. Based on 25 years of conducting TED testing aboard inshore commercial shrimp trawl vessels in the southeastern US we estimate that in addition to sea turtles, commercial shrimp trawls used to conduct research will capture (over the entire 5 year duration of the permit) ~ 4,000,000 penaeids (shrimp) ~ 1,600,000 sciaenids (drums), ~ 200,000 triglids (sea robins), ~ 400,000 bothids (flounders), ~ 20,000 charcharinids (sharks), ~ 20,000 dasyatids (rays), ~ 20,000 mylobatids (rays), ~1,200,000 clupeids (shad), ~200,000 engraulids (anchovies), ~20,000 synodontids (lizardfish), ~400,000 ariids (catfish), ~20,000 lutjanids (snappers), ~40,000 ehippids (spadefish), ~ 80,000 carangids (jacks), ~ 40,000 sculdids (mantis shrimps), ~ 20,000 portunids (blue crabs), ~ 800,000 ctenophoras (comb jellies), ~ 400,000 pelagiids (sea nettles), and ~ 400,000 ulmarids (moon jellies) during the 5 year period. The shrimp will be retained by the vessel for sale and the rest of the catch will be discarded. Since shrimp trawls are a towed gear, we expect mortality associated with this gear to be high. However, all efforts will be made to return bycatch to the water as quickly as possible, maximizing the chances for survival.

Turtles may be captured by the following trawl types:

#### Flynets and other High Opening Bottom Trawls

Flynets and other high opening bottom trawls vary in mesh size and headrope length depending on the targeted catch. Flynets are typically two-seam fish trawls constructed of graduated mesh sizes beginning with large mesh (16", 32", or 64" stretched mesh) in the wings of the trawl following a slow 3:1 taper to smaller mesh sizes in the body, extension, and mesh sizes as small as 3-inch in the codend or bag section. The trawls are bottom tending with net sizes ranging from 80 to 100 feet (headrope length). Vertical height of these trawls when fished may be as much as 30 feet. Flynet vessels are single-rigged (towing one trawl) using a net reel for storage. Tow speeds are often between three and four knots with tow durations ranging from 10 minutes to several hours. High opening bottom trawls which are used to target scup and black sea bass may have headrope lengths as long as 150 ft. and mesh sizes up to 40 ft. Similar in general design, but of much smaller headrope size (40-75 ft.) are trawls used to target inshore Loligo squid.

#### Crab Trawl Fishery

Crab trawls are typically heavily chained 2 seam nets with headrope lengths from 25 to 50 ft depending on vessel size. Mesh sizes are required to be no smaller than 3 in. and no greater than 4-in. stretched mesh. The vertical opening of the trawl is approximately 3 ft and towing speed range from 2 to 4 knots depending on the horsepower of the vessel.

#### Shrimp trawls

Shrimp trawls are typically 4-seam or 2-seam in construction with headrope lengths from 12-ft to 100 ft. depending on vessel size and location fished (inshore vs. offshore). Mesh sizes are fairly uniform throughout the Atlantic and Gulf of Mexico, ranging from 1.25 in. to 2 in. The vertical opening of a shrimp trawl is dependent on the target species of shrimp. The vertical opening of a shrimp trawl may range from 3 ft (brown and pink shrimp) to 16 ft. (white shrimp). Towing speeds vary from 2 to 3 knots depending on size and horsepower of the towing vessel and personal preference of the fisher.

#### Skimmer trawls

Skimmer trawls are used exclusively in inshore waters in all states where the gear is allowed (Louisiana, Mississippi, Alabama and North Carolina). Originally designed to catch white shrimp by fishing the entire water column, today skimmers may also be rigged with low opening nets and are used to target brown shrimp. The trawl is held open by a metal framework and is fished on the bottom. Skimmer trawls are "pushed" along the side of the vessel, rather than towed as conventional trawl gear. This allows the vessel operator to maneuver the nets in confined areas such as bayous and sloughs or along the edge of channels. Because skimmers are typically rigged to fish higher in the water column, the potential for turtle capture may be greater than a lower opening otter trawl. The catch may be picked up and dumped without interruption of the towing process as the codends may be lifted to the deck of the boat without raising the entire net out of the water. The size of a skimmer trawl is regulated by States and can vary from 15 to 30 ft. in horizontal opening.

#### Butterfly Nets

Butterfly nets, sometimes called "wing nets" consist of a square metal frame that forms the mouth of the net. Webbing is attached to the frame and tapers back to a codend. The nets can be fished from a stationary platform or a pair of nets can be attached to either side of a vessel. The vessel is then anchored in a tidal current to capture emigrating shrimp, or the nets are pushed through the water by the vessel. As with skimmer trawls, the catch may be picked up and dumped without raising the entire net out of the water.

#### Project B: Modifications to Longline Fisheries Gear (Table 2)

Sea turtles taken on longline fishery gear are either foul hooked, entangled, hooked in the mouth/beak, or have swallowed the hook. Leatherback sea turtles do not normally ingest the bait, but become entangled in the main and branch lines, and are usually released alive (Williams et. al 1996, Garrison 2003). Most are foul hooked externally, often in the shoulder, armpit, and flipper areas. Loggerhead turtles frequently consume the bait and become hooked in the mouth or swallow the hook. Almost all loggerhead turtles are released alive, but they are sometimes released with hooks still embedded in their mouths or lower in the GI tract when hook removal is not possible, and survival rates are unknown.

Researchers will fish gear within fishery guidelines, and all captures of sea turtles will occur in a fishery and are authorized by the ITS of the biological opinion done for the fishery. All fisheries would be federally managed or regulated.

#### Handling and Sampling:

All turtles will be handled, weighed, and photographed and subject to temporary carapace marking, flipper tagging, PIT tagging, standard measurements, and skin biopsy in accordance with the methods in NMFS-SEFSC-TM-579, the SEFSC Sea Turtle Research Techniques Manual (SEFSC 2008a), [http://www.sefsc.noaa.gov/turtles/TM\\_579\\_SEFSC\\_STRTM.pdf](http://www.sefsc.noaa.gov/turtles/TM_579_SEFSC_STRTM.pdf). Turtles will be protected from temperature extremes and kept moist. All equipment that comes into contact with body fluids, cuts or lesions will be disinfected between turtles. A separate set of sampling equipment will be maintained for turtles displaying fibropapilloma tumors, or these animals will not be sampled if spare equipment is not available. Biopsy and tagging sites will be disinfected using isopropyl alcohol and 10% povidone-iodine. More specific sampling details can be found in NMFS-SEFSC-TM-579.

In the event of a gear interaction, turtles will be handled according to gear removal protocols in NMFS-SEFSC-TM-580, Careful Release Protocols for Sea Turtle Release with Minimal Injury (SEFSC 2008b), [http://www.sefsc.noaa.gov/turtles/TM\\_NMFS\\_SEFSC\\_580\\_2010.pdf](http://www.sefsc.noaa.gov/turtles/TM_NMFS_SEFSC_580_2010.pdf). Resuscitation guidelines will be followed in the unlikely event that a turtle is recovered unresponsive. Any fishing gear will be removed promptly following the specific protocols in NMFS-SEFSC-580.

#### Import/Export Activities:

NOAA Fisheries SEFSC currently holds a CITES permit #10US045532/10 to import salvaged sea turtle carcasses and parts and tissue samples from live animals from the high seas and foreign ports. All carcasses salvaged and biopsy samples obtained from animals taken during commercial fishing operations and NMFS research activities, generally on the high seas of the Atlantic Ocean, will be landed in U.S. ports in almost all cases. We do not intend to ship the carcasses or biopsy samples back to the U.S. from foreign ports of landing except in rare cases, where proper CITES procedures will be followed.

Wild sea turtles incidentally captured and killed as a result of interaction with fishing gear (independent of the research, or as a result of authorized capture in state waters) while NMFS-permitted researchers are aboard will be salvaged, stored on ice or frozen and returned to U.S. shore for scientific studies in cases where this is possible. These carcasses otherwise would be returned dead to the sea. Wild turtles incidentally captured alive as a result of interaction with fishing gear during NMFS-permitted directed research, will have biopsy tissue samples (6-8 mm) taken for genetic analysis and scientific study.

The purposes of the scientific studies include health assessment and demographic studies. We do not propose to purposefully take protected sea turtles, just to fully utilize those that are incidentally captured or killed during observed fishing operations. These researchers all will be working under a NMFS permit and with fisheries/research activities for which there has been a Biological Opinion issued and an ESA Section 7 consultation with NMFS. The pelagic stage of sea turtles, found on the high seas, is a life stage for which there is little information, and much more is needed to make management decisions about activities impacting this stage.

The purpose of import is to conduct genetic analysis in order to determine population structure and identify stock origin of sea turtles at key forage areas, migratory corridors as well as stock origin of stranding and fisheries bycatch. These are priority actions in the NMFS-USFWS Recovery Plans for sea turtles, and the results of these studies will allow identification of fisheries that are impacting declining nesting stocks, as well as forage areas and migratory corridors that are linked to different nesting stocks. This information will directly enhance recovery efforts on behalf of these endangered species.

In addition to the genetic analysis, several other NMFS-USFWS Recovery Plan objectives are addressed with this research. Loggerhead recovery plan priorities addressed include: (62) Minimize loggerhead bycatch in domestic fisheries using a gear-based strategy, specifically (6228) Investigate turtle exclusion rates for soft TEDs under field conditions using videography; and (6244) Continue to conduct focused experiments on domestic commercial pelagic and demersal longline fisheries. Leatherback recovery plan priorities addressed include: (222) Monitor and reduce mortality from commercial and recreational fisheries, specifically (2221) Implement measures to reduce capture and mortality from commercial shrimping vessels. Kemp's ridley recovery plan priorities addressed include: (222) Monitor and reduce mortality from fisheries, specifically (2221) Enforce TED regulations and expand use. Green turtle recovery plan priorities addressed include: (222) Monitor and reduce mortality from commercial and recreational fisheries, specifically (2221) Implement and enforce TED regulations in all United States waters at all times, and (2225) Promulgate regulations to reduce fishery related mortalities. Hawksbill recovery plan priorities addressed include: (222) Monitor and reduce incidental mortality in the commercial and recreational fisheries.

Any carcasses retrieved will be bagged and shipped on ice in coolers. Once landed at a U.S. port, biopsy samples and carcasses will be shipped to NMFS facilities along the U.S. east and Gulf Coast for necropsy by staff holding current NMFS and/or USFWS permits under the authority of the Sea Turtle Stranding and Salvage Network. A comprehensive examination including measurements will be conducted on all animals. Tissue samples will be taken from non-frozen animals for histopathological examination and for contaminant analyses. We will attempt to identify the mechanism of death (e.g., drowning, hook puncture of major blood vessel, etc.) for any carcass. Hard parts will be salvaged for aging and life history studies. Tissue biopsies will be collected for genetic studies. Gut contents will be salvaged for diet studies.

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## Supplemental Information

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Status of Species:	<p>All 7 species of marine turtles are listed under the Endangered Species Act (ESA); 6 of those species fall under the jurisdiction of the NOAA Fisheries Office of Protected Resources. Green turtles and olive ridley turtles have breeding populations that were listed separately under the ESA, and therefore, have more than one ESA status.</p> <p>Chelonia mydas: Endangered- Florida &amp; Mexico's Pacific coast breeding colonies, threatened all other areas. CITES Appendix I. Eretmochelys imbricata: Endangered. CITES Appendix I. Lepidochelys kempii: Endangered. CITES Appendix I. Dermochelys coriacea: Endangered. CITES Appendix I. Caretta caretta: Threatened, proposed endangered in Northwest Atlantic Ocean. CITES Appendix I. Lepidochelys olivacea: Endangered- Mexico's Pacific coast breeding colonies; threatened all other areas. CITES Appendix I.</p>
Lethal Take:	<p>No intentional lethal take is involved as a result of the proposed activities. In the rare event that unintentional lethal takes do occur, they are not expected to exceed 3 loggerhead, 2 Kemp's ridley, 2 green, 1 leatherback, 1 hawksbill, and 1 olive ridley sea turtles. Unintentional mortalities may be caused by forcible submergence and drowning during trawl captures.</p>
Anticipated Effects on Animals:	<p>One of the risks to sea turtles from capture in trawl gear is forced submergence. Sea turtles forcibly submerged in any type of restrictive gear eventually suffer fatal consequences from prolonged anoxia and/or seawater infiltration of the lung (Lutcavage et al. 1997). A study examining the relationship between tow time and sea turtle mortality showed that mortality was strongly dependent on trawling duration, with the proportion of dead or comatose turtles rising from 0% for the first 50 minutes of capture to 70% after 90 minutes of capture (Henwood and Stuntz 1987). However, metabolic changes that can impair a sea turtles ability to function can occur within minutes of a forced submergence. While most voluntary dives appear to be aerobic, showing little if any increases in blood lactate and only minor changes in acid-base status, the story is quite different in forcibly submerged turtles where oxygen stores are rapidly consumed, anaerobic glycolysis is activated, and acid-base balance is disturbed, sometimes to lethal levels (Lutcavage and Lutz 1997). Forced submergence of Kemp's ridley sea turtles in shrimp trawls resulted in an acid-base imbalance after just a few minutes (times that were within the normal dive times for the species) (Stabenau et al. 1991). Conversely, recovery times for acid-base levels to return to normal may be prolonged. Henwood and Stuntz (1987) found that it took as long as 20 hours for the acid-base levels of loggerhead sea turtles to return to normal after capture in shrimp trawls for less than 30 minutes. This effect is expected to be worse for sea turtles that are recaptured before metabolic levels have returned to normal. The NRC (1990) has suggested that physical and biological factors that increase energy consumption, such as high water temperatures and increased metabolic rates characteristic of small turtles would be expected to exacerbate the harmful effects of forced submergence from trawl capture.</p> <p>The anticipated effects of the research sampling are expected to be minimal. Only minor stress, discomfort, and pain are expected during biopsy sample collection and tagging. In the past, reactions have ranged from no reaction, to a mild reaction including pulling away a flipper or minor bleeding at the tagging or biopsy site.</p>
Measures to Minimize Effects:	<p>Capture/Handling/Restraint</p> <p>Project A: Turtle Excluder Device (TED) Evaluations in Atlantic and Gulf of Mexico Trawl Fisheries</p> <p>While we anticipate the majority of the trawl sets proposed in Project A will involve the use of a prototype TED, designed for the exclusion of large turtles including leatherbacks, some of the trawl sets may be conducted without TEDs as a means of evaluating the TED effect on the catch of target species. The researchers feel that the risk of potentially capturing a turtle during this project is low, and such risk is worthwhile if it will lead to the successful development of TEDs for fisheries in which TEDs are not used currently.</p> <p>In order to minimize stress to a turtle that may be captured in a trawl set without a TED, the researchers propose to use the following measures:</p>



1) The use of a RF (radio frequency) real-time video monitoring system during non-TED trawl sets in water depths of 50 meters or less. The RF video system transmits real time video signals from the trawl to the towing vessel via a camera-to-surface cable. The terminal end of the cable is tethered to a float at the surface that houses an RF signal processor and transmitter (antennae). The video signal is then transmitted to the towing vessel where it is monitored by project personnel. The RF camera will be placed in the section of the trawl in which a TED would be installed (extension piece). This area typically has the smallest trawl diameter. The placement of the camera in this area will allow the observer to view all objects that are in transit to the codend section. When a turtle is observed in the trawl with the RF camera system, the vessel captain will be instructed to commence haul back of the gear immediately to facilitate recovery of the animal. NOAA Fisheries has used the RF video system successfully for trawl observations of captured turtles during TED tests conducted aboard the R/V Georgia Bulldog from 2002 to 2004.

2) The use of limited tow times may be employed during some trawl sets without a TED to reduce the risk of stress to a captured turtles. The length of tow times will be in accordance with tow time limitations set for trawl gear that are exempt from TED use.

3.) Should a comatose or unresponsive turtle be encountered during the course of this work, resuscitation and release of the animal will be conducted in accordance with guidelines set forth in NOAA Technical Memorandum NMFS-SEFSC-579, "Sea Turtle Research Techniques Manual". The turtle will be kept moist and in a shaded area on its plastron with the hindquarters elevated approximately 15 - 30 degrees to permit the lungs to drain off water for a period of up to 24 hours. When successfully resuscitated, the turtle will be released over the stern of the vessel when gear is not in use and the engine is in neutral. The turtle will be released in an area where it is unlikely to be recaptured or injured by vessels.

#### Project B: Modifications to Longline Fisheries Gear

In the event a turtle is captured or entangled in longline gear during the course of this work, techniques and methods for removal of the gear will be followed in accordance with NOAA Technical Memorandum NMFS-SEFSC-580, "Careful Release Protocols for Sea Turtle Release with Minimal Injury", [http://www.sefsc.noaa.gov/turtles/TM\\_NMFS\\_SEFSC\\_580\\_2010.pdf](http://www.sefsc.noaa.gov/turtles/TM_NMFS_SEFSC_580_2010.pdf), to remove fishing gear.

If a turtle is entangled, but not hooked;

- 1.) The turtle will be brought alongside the vessel and an assessment will be made as to whether to bring the turtle onboard to effect disentanglement.
- 2.) If conditions or size of the turtle will not allow boating of the turtle, as much of the gear will be removed from the animal as possible using the appropriate tethers and line cutting equipment as approved for use and described in TM NMFS-SEFSC-580.

If a turtle is hooked, but not entangled;

- 1.) The turtle will be brought alongside the vessel and an assessment will be made as to whether to bring the animal onboard to effect dehooking.
- 2.) If conditions or size of the turtle will not allow boating of the turtle, tethering and de-hooking techniques will be conducted as described in TM NMFS-SEFSC-580 using approved equipment.
- 3.) All efforts will be made to remove externally embedded hooks unless the location of the hook on the animal (i.e. braincase, glottis or deeply ingested) may cause additional harm.
- 4.) No attempt will be made to remove an ingested hook unless it is visible.
- 5.) If part of the hook is visible, but cannot be removed, bolt cutters will be used to remove the visible part of the hook if possible.

If a turtle is hooked and entangled;

- 1.) The turtle will be brought alongside the vessel and an assessment will be made as to whether to bring the turtle onboard to effect disentanglement.
- 2.) If conditions or size of the turtle will not allow boating of the turtle, tethering and dehooking techniques will be conducted as described in TM NMFS-SEFSC-580 using approved equipment.
- 3.) Dehooking efforts will be conducted before attempting to disentangle the turtle.
- 4.) All efforts will be made to remove externally embedded hooks unless the location of the hook on the animal (i.e. braincase, glottis or deeply ingested) may cause additional harm.

After dehooking and disentanglement of boated turtles, the animals will be released over the stern of the vessel when gear is not in use and the engine is in neutral. The turtle will be released in an area where it is unlikely to be recaptured or injured by vessels.

Tagging and biopsy sample collection

All tagging and biopsy sample collection will be conducted in accordance with the revised edition of NOAA Tech Memo NMFS-SEFSC-579 approved by IACUC, [http://www.sefsc.noaa.gov/turtles/TM\\_579\\_SEFSC\\_STRTM.pdf](http://www.sefsc.noaa.gov/turtles/TM_579_SEFSC_STRTM.pdf).

Only minor stress, discomfort, and pain are expected during sample collection. All equipment that comes into contact with sea turtle body fluids, cuts or lesions will be disinfected between the processing of each turtle using a 1:10 solution of 5-6% bleach or other appropriate disinfectant. A separate set of sampling equipment for handling animals displaying fibropapilloma tumors will be maintained and thoroughly disinfected if ever used. Tagging and biopsy sites will be disinfected using 10% povidone-iodine solution and isopropyl alcohol swabs.

This permit application has been reviewed and approved by the Institutional Animal Care and Use Committee (IACUC).

Effects on non-target species in the study area, including estimated numbers by species of potential non-target bycatch, and what this estimate is based on, and steps taken to minimize effects:

Marine Mammals

Trawling will not be initiated when marine mammals (with exception of dolphins or porpoises) are observed within the vicinity of the research, and the marine mammals will be allowed to either leave or pass through the area safely before trawling is initiated. Every effort will be made to prevent interactions with all marine mammals. Should a marine mammal become captured, research will be stopped immediately and the animal will be freed. All captures will be reported as soon as possible.

Manatees

Although manatee interactions are not anticipated, all vessel personnel will be informed that it is illegal to intentionally take manatees. Crew involved in research will keep a look out for manatees at all times. If a manatee is sighted within 100 meters of the vessel, all activities will stop. If a manatee is incidentally captured, the vessel will be stopped and all engines turned off or put in neutral. Proper release guidelines will be followed and the capture will be reported immediately.

Sturgeon Handling Requirements

Although sturgeon interactions are not expected, if captured incidentally during the course of research, it will be disentangled and released immediately. If possible, all individuals will be kept in the water and returned to neutral buoyancy prior to release.

Johnson's Sea Grass and Critical Habitat

No research activities will be conducted over, on or immediately adjacent to Johnson's sea grass or in Johnson's sea grass critical habitat.

Other Sea Grass Species, Live Bottom, or Coral

Research will not be conducted over, on, or immediately adjacent to any non-listed sea grass species, live bottom, or coral habitat.

Non-Research Species

All incidentally captured non-target bycatch species will be returned to the water as soon as possible in an effort to minimize mortality.

Leatherbacks

Leatherbacks will only be boated if they can be easily and safely brought on board the vessel. Leatherback turtles will be handled by at least two people, one on either side of the turtle, and precautions will be taken to ensure that animals are supported from underneath and not turned on their back.

**Resources Needed to Accomplish Objectives:**

NOAA will fund, support, and oversee these research activities. The Southeast Fisheries Science Center has a well established sea turtle research program. Researchers have a degree in biology or a related field, and they are qualified and trained to conduct this research. The SEFSC Sea Turtle Program uses a standardized training program to ensure that researchers have demonstrated proper sea turtle handling and sampling techniques under SEFSC staff supervision before conducting this research. Training materials can be found on our website at: <http://www.sefsc.noaa.gov/seaturtlefisheriesobservers.jsp>.

**Disposition of Tissues:** A tissue and DNA "bank" has been established at the NOAA-NMFS Southwest Science Center's La Jolla Laboratory to archive these biopsy samples for long-term storage in order to provide a repository for samples for these and future conservation research studies. They will be stored until consumed during analysis at the following location: Southwest Fisheries Science Center, 3333 North Torrey Pines Court, La Jolla, CA 92037-1002, (858) 546-7166.

**Public Availability of Product/Publications:** Research will be reported in a variety of venues, including unpublished reports, Technical Memoranda, and peer-reviewed journals. Each of these publications will be posted promptly on our website at <http://www.sefsc.noaa.gov/seaturtlesprogram.jsp>.

## Location/Take Information

## Location

**Research Area:** Atlantic Ocean **States:** AL,CT,DE,FL,GA,LA,MA,MD,ME,MS,NC,NH,NJ,NY,PR,RI,SC,TX,VA,VI

**Location Description:** Project A: Turtle Excluder Device (TED) Evaluations Atlantic Ocean, Gulf of Mexico, Caribbean Sea and tributaries (animals captured within fisheries managed by Federal authority)

## Take Information

Line	Ver	Species	Listing Unit/Stock	Production /Origin	Life Stage	Sex	Expected Take	Takes Per Animal	Take Action	Observe /Collect Method	Procedure	Transport Record	Begin Date	End Date
1		Turtle, loggerhead sea	Range-wide (NMFS Threatened)	Wild	All except hatchling	Male and Female	155	1	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue ; Weigh	N/A	1/12/2012	1/31/2017
Details: Project A Turtle Excluder Device (TED) Evaluations: animals captured within fisheries managed by Federal authority														
2		Turtle, loggerhead sea	Range-wide (NMFS Threatened)	Wild	All except hatchling	Male and Female	70	1	Capture/Handle/Release	Net, trawl	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue ; Weigh	N/A	1/12/2012	1/31/2017
Details: Project A Turtle Excluder Device (TED) Evaluations: animals captured by fishermen contracted by researchers to conduct experimental trawling in waters managed by State authority														
3		Turtle, Kemp's ridley sea	Range-wide (NMFS Endangered)	Wild	All except hatchling	Male and Female	78	1	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue ; Weigh	N/A	1/12/2012	1/31/2017
Details: Project A Turtle Excluder Device (TED) Evaluations: animals captured within fisheries managed by Federal authority														
4		Turtle, Kemp's ridley sea	Range-wide (NMFS Endangered)	Wild	All except hatchling	Male and Female	20	1	Capture/Handle/Release	Net, trawl	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue ; Weigh	N/A	1/12/2012	1/31/2017
Details: Project A Turtle Excluder Device (TED) Evaluations: animals captured by fishermen contracted by researchers to conduct experimental trawling in waters managed by State authority														
5		Turtle, leatherback sea	Range-wide (NMFS Endangered)	Wild	All except hatchling	Male and Female	64	1	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue ; Weigh	N/A	1/12/2012	1/31/2017
Details: Project A Turtle Excluder Device (TED) Evaluations: animals captured within fisheries managed by Federal authority														
6		Turtle, leatherback sea	Range-wide (NMFS Endangered)	Wild	All except hatchling	Male and Female	18	1	Capture/Handle/Release	Net, trawl	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue ; Weigh	N/A	1/12/2012	1/31/2017
Details: Project A Turtle Excluder Device (TED) Evaluations: animals captured by fishermen contracted by researchers to conduct experimental trawling in waters managed by State authority)														

7		Turtle, green sea	Range-wide (NMFS Threatened)	Wild	All except hatchling	Male and Female	35	1	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue ; Weigh	N/A	1/12/2012	1/31/2017
		<b>Details:</b> Project A Turtle Excluder Device (TED) Evaluations: animals captured within fisheries managed by Federal authority												
8		Turtle, green sea	Range-wide (NMFS Threatened)	Wild	All except hatchling	Male and Female	12	1	Capture/Handle/Release	Net, trawl	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue ; Weigh	N/A	1/12/2012	1/31/2017
		<b>Details:</b> Project A Turtle Excluder Device (TED) Evaluations: animals captured by fishermen contracted by researchers to conduct experimental trawling in waters managed by State authority												
9		Turtle, hawksbill sea	Range-wide (NMFS Endangered)	Wild	All except hatchling	Male and Female	23	1	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue ; Weigh	N/A	1/12/2012	1/31/2017
		<b>Details:</b> Project A Turtle Excluder Device (TED) Evaluations: animals captured within fisheries managed by Federal authority												
10		Turtle, hawksbill sea	Range-wide (NMFS Endangered)	Wild	All except hatchling	Male and Female	10	1	Capture/Handle/Release	Net, trawl	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue ; Weigh	N/A	1/12/2012	1/31/2017
		<b>Details:</b> Project A Turtle Excluder Device (TED) Evaluations: animals captured by fishermen contracted by researchers to conduct experimental trawling in waters managed by State authority												
11		Turtle, olive ridley sea	Range-wide (NMFS Threatened)	Wild	All except hatchling	Male and Female	23	1	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue ; Weigh	N/A	1/12/2012	1/31/2017
		<b>Details:</b> Project A Turtle Excluder Device (TED) Evaluations: animals captured within fisheries managed by Federal authority												
12		Turtle, olive ridley sea	Range-wide (NMFS Threatened)	Wild	All except hatchling	Male and Female	10	1	Capture/Handle/Release	Net, trawl	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue ; Weigh	N/A	1/12/2012	1/31/2017
		<b>Details:</b> Project A Turtle Excluder Device (TED) Evaluations: animals captured by fishermen contracted by researchers to conduct experimental trawling in waters managed by State authority												
13		Turtle, unidentified sea	NA (NMFS Endangered)	Wild	All except hatchling	Male and Female	57	1	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue ; Weigh	N/A	1/12/2012	1/31/2017
		<b>Details:</b> Project A Turtle Excluder Device (TED) Evaluations: animals captured within fisheries managed by Federal authority												
14		Turtle, unidentified sea	NA (NMFS Endangered)	Wild	All except hatchling	Male and Female	28	1	Capture/Handle/Release	Net, trawl	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue ; Weigh	N/A	1/12/2012	1/31/2017
		<b>Details:</b> Project A Turtle Excluder Device (TED) Evaluations: animals captured by fishermen contracted by researchers to conduct experimental trawling in waters managed by State authority												
22		Turtle, loggerhead sea	Range-wide (NMFS Threatened)	Wild	All except hatchling	Male and Female	3	1	Unintentional mortality	Net, trawl	Salvage (carcass, tissue, parts)	N/A	1/12/2012	1/31/2017
		<b>Details:</b> Unintentional mortalities caused by forcible submergence/drowning during trawl captures; total requested unintentional mortality is for the 5-year duration of the permit, not annually												
23		Turtle, Kemp's ridley sea	Range-wide (NMFS Endangered)	Wild	All except hatchling	Male and Female	2	1	Unintentional mortality	Net, trawl	Salvage (carcass, tissue, parts)	N/A	1/12/2012	1/31/2017
		<b>Details:</b> Unintentional mortalities caused by forcible submergence/drowning during trawl captures; total requested unintentional mortality is for the 5-year duration of the permit, not annually												

24		Turtle, green sea	Range-wide (NMFS Threatened)	Wild	All except hatchling	Male and Female	2	1	Unintentional mortality	Net, trawl	Salvage (carcass, tissue, parts)	N/A	1/12/2012	1/31/2017
		<b>Details:</b> Unintentional mortalities caused by forcible submergence/drowning during trawl captures; total requested unintentional mortality is for the 5-year duration of the permit, not annually												
25		Turtle, leatherback sea	Range-wide (NMFS Endangered)	Wild	All except hatchling	Male and Female	1	1	Unintentional mortality	Net, trawl	Salvage (carcass, tissue, parts)	N/A	1/12/2012	1/31/2017
		<b>Details:</b> Unintentional mortalities caused by forcible submergence/drowning during trawl captures; total requested unintentional mortality is for the 5-year duration of the permit, not annually												
26		Turtle, hawksbill sea	Range-wide (NMFS Endangered)	Wild	All except hatchling	Male and Female	1	1	Unintentional mortality	Net, trawl	Salvage (carcass, tissue, parts)	N/A	1/12/2012	1/31/2017
		<b>Details:</b> Unintentional mortalities caused by forcible submergence/drowning during trawl captures; total requested unintentional mortality is for the 5-year duration of the permit, not annually												
27		Turtle, olive ridley sea	Range-wide (NMFS Threatened)	Wild	All except hatchling	Male and Female	1	1	Unintentional mortality	Net, trawl	Salvage (carcass, tissue, parts)	N/A	1/12/2012	1/31/2017
		<b>Details:</b> Unintentional mortalities caused by forcible submergence/drowning during trawl captures; total requested unintentional mortality is for the 5-year duration of the permit, not annually												

**Location**  
**Research Area:** Atlantic Ocean **States:** AL,CT,DE,FL,GA,LA,MA,MD,ME,MS,NC,NH,NJ,NY,PR,RI,SC,TX,VA,VI  
**Location Description:** Project B: Modifications to Longline Fisheries Gear. Atlantic Ocean, Gulf of Mexico, Caribbean Sea and tributaries (animals captured within fisheries managed by Federal authority)

Take Information

Line	Ver	Species	Listing Unit/Stock	Production /Origin	Life Stage	Sex	Expected Take	Takes Per Animal	Take Action	Observe /Collect Method	Procedure	Transport Record	Begin Date	End Date
1		Turtle, loggerhead sea	Range-wide (NMFS Threatened)	Wild	All except hatchling	Male and Female	28	1	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue ; Weigh	N/A	1/12/2012	1/31/2017
		<b>Details:</b> Project B Modifications to Longline Fisheries Gear. Animals captured within fisheries managed by Federal authority												
2		Turtle, Kemp's ridley sea	Range-wide (NMFS Endangered)	Wild	All except hatchling	Male and Female	3	1	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue ; Weigh	N/A	1/12/2012	1/31/2017
		<b>Details:</b> Project B Modifications to Longline Fisheries Gear. Animals captured within fisheries managed by Federal authority												
3		Turtle, leatherback sea	Range-wide (NMFS Endangered)	Wild	All except hatchling	Male and Female	30	1	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue ; Weigh	N/A	1/12/2012	1/31/2017
		<b>Details:</b> Project B Modifications to Longline Fisheries Gear. Animals captured within fisheries managed by Federal authority												
4		Turtle, green sea	Range-wide (NMFS Threatened)	Wild	All except hatchling	Male and Female	4	1	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue ; Weigh	N/A	1/12/2012	1/31/2017

Details: Project B Modifications to Longline Fisheries Gear. Animals captured within fisheries managed by Federal authority														
5		Turtle, hawksbill sea	Range-wide (NMFS Endangered)	Wild	All except hatchling	Male and Female	4	1	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue ; Weigh	N/A	1/12/2012	1/31/2017
Details: Project B Modifications to Longline Fisheries Gear. Animals captured within fisheries managed by Federal authority														
6		Turtle, olive ridley sea	Range-wide (NMFS Threatened)	Wild	All except hatchling	Male and Female	3	1	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue ; Weigh	N/A	1/12/2012	1/31/2017
Details: Project B Modifications to Longline Fisheries Gear. Animals captured within fisheries managed by Federal authority														
7		Turtle, unidentified sea	NA (NMFS Endangered)	Wild	All except hatchling	Male and Female	3	1	Handle/Release	Capture under other authority	Mark, carapace (temporary); Mark, flipper tag; Mark, PIT tag; Measure; Photograph/Video; Sample, tissue ; Weigh	N/A	1/12/2012	1/31/2017
Details: Project B Modifications to Longline Fisheries Gear. Animals captured within fisheries managed by Federal authority														

NEPA Checklist

1) If your activities will involve equipment (e.g., scientific instruments) or techniques that are new, untested,or otherwise have unknown or uncertain impacts on the biological or physical environment , please discuss the degree to which they are likely to be adopted by others for similar activities or applied more broadly.

We propose to test new TED designs for the various fisheries listed under this permit. Anytime new designs are trialed, there is the potential for takes and some of these may be lethal. Also, during some testing TEDs will be tested in a paired experimental design with control nets with no TEDs installed. Even though tow time limits will be imposed during this type of testing, there is still the potential for lethal takes. During testing under the previous permit, we did not have any lethal takes but the potential still exists. If these new designs prove to be effective, they will be implemented by the fisheries.

None of the sampling activities that we propose conducting (applying PIT, Inconel tags; collecting morphometric data and skin tissue samples) are new, innovative, or experimental. All of these activities have been conducted in the past with little or no detrimental effect to sea turtles.

2) If your activities involve collecting, handling, or transporting potentially infectious agents or pathogens (e.g., biological specimens such as live animals or blood), or using or transporting hazardous substances (e.g., toxic chemicals), provide a description of the protocols you will use to ensure public health and human safety are not adversely affected, such as by spread of zoonotic diseases or contamination of food or water supplies.

Yes, our activities involve the collection, handling and transport of skin tissue biopsy samples. All samples will be collected, handled, stored, and shipped in such a manner as to ensure human safety from injury or zoonotic disease transmission as well as provide for the protection of the sea turtles that are sampled. Researchers will wear disposable gloves, and samples will be stored in saturated NaCl solution, or in rare cases, dimethyl sulfoxide (DMSO), a non-toxic solution contained within sealed vials. Please see the attached SEFSC Sea Turtle Research Techniques Manual for a detailed description of all activities. All animals will be handled in accordance with defined careful handling protocols designed to minimize injury risk to the researcher.

3) Describe the physical characteristics of your project location, including whether you will be working in or near unique geographic areas such as state or National Marine Sanctuaries, Marine Protected Areas, Parks or Wilderness Areas, Wildlife Refuges, Wild and Scenic Rivers, designated Critical Habitat for endangered or threatened species, Essential Fish Habitat, etc. Discuss how your activities could impact the physical environment, such as by direct alteration of substrate during use of bottom trawls, setting nets, anchoring vessels or buoys, erecting blinds or other structures, or ingress and egress of researchers, and measures you will take to minimize these impacts.

All activities will occur outside these listed habitats on normal fishing grounds, and not in right whale critical habitat, EFH, or sanctuaries. Trawling will be in inshore bays and estuaries, nearshore waters and offshore waters of the EEZ from Cape Canaveral, Florida, northward to the New York/Connecticut border, and in Gulf of Mexico fisheries, project operations may be conducted in inshore bays and estuaries, nearshore waters and offshore waters (> 10 fm) from Key West, Florida to Brownsville, Texas. Because the work will be fishery dependent, specific areas of operation and, thus, locations of takes, will be determined by the location of target catch aggregations at the time of a given trip. All efforts will be made to trawl in sandy areas away from live bottom and seagrass.

Locations for Project B will be in the coastal and offshore waters of the Western Atlantic Ocean, Gulf of Mexico, and Caribbean Sea. Benthic habitat will not be affected by this work.

4) Briefly describe important scientific, cultural, or historic resources (e.g., archeological resources, animals used for subsistence, sites listed in or eligible for listing in the National Register of Historic Places) in your project area and discuss measures you will take to ensure your work does not cause loss or destruction of such resources. If your activity will target marine mammals in Alaska or Washington, discuss measures you will take to ensure your project does not adversely affect the availability (e.g., distribution, abundance) or suitability (e.g., food safety) of these animals for subsistence uses.

These entities will be unaffected by our activities.

5) Discuss whether your project involves activities known or suspected of introducing or spreading invasive species, intentionally or not, (e.g., transporting animals or tissues, discharging ballast water, use of equipment at multiple sites). Describe measures you would take to prevent the possible introduction or spread of non-indigenous or invasive species, including plants, animals, microbes, or other biological agents.

Transport of sea turtles or skin biopsy tissues would not spread non-indigenous or invasive species.

Project Contacts

Responsible Party: Bonnie Ponwith

Primary Contact: Lesley Stokes

Principal Investigator: Jeff Gearhart

Other Personnel:

Name	Role(s)
Daniel G Foster	Co-Investigator
Bret D Hataway	Co-Investigator
John Mitchell	Co-Investigator
Brian Stacy	Veterinarian

Attachments

Application Archive - P16253T14Issued.pdf (Added Jan 13, 2012)

Contact - Bret D Hataway: C14915T5CV\_Hataway.doc (Added Sep 6, 2013)

Contact - Bret D Hataway: C14915T5Hataway CV-Resume 12-10.pdf (Added Jan 26, 2011)

Contact - Brian Stacy: C15240T5CV Stacy.3.2014.pdf (Added Mar 31, 2014)

Contact - Daniel G Foster: C14914T5Foster\_cv.pdf (Added Jan 26, 2011)

Contact - Jeff Gearhart: C14912T5Gearhart CV 12-10.pdf (Added Jan 26, 2011)

Contact - John Mitchell: C8934T5Mitchell CV \_2010.pdf (Added Jan 26, 2011)

Project Description - P16253T11570\_2010\_supplementary file.doc (Added Jan 26, 2011)

References - P16253T121570\_2010\_references file.doc (Added Jan 26, 2011)

Resources Needed - P16253T15IACUC forms\_1570.pdf (Added May 20, 2011)

Status

Application Status:	Application Complete		
Date Submitted:	January 28, 2011		
Date Completed:	May 24, 2011		
FR Notice of Receipt Published:	June 27, 2011	Number:	0648-XA518
Comment Period Closed:	July 27, 2011	Comments Received:	Yes    Comments Addressed: Yes
Last Date Archived:	October 29, 2014		

- **ESA Section 10(a)(1)(A) permit (other)**
  - Current Status:** Issued    **Status Date:** January 12, 2012
  - Section 7 Consultation:** Formal Consultation
  - NEPA Analysis:** Environmental Assessment
  - Date Cleared by General Counsel:** January 4, 2012
  - FR Notice of Issuance/Denial Published:** February 23, 2012    **Notice Number:** 0648-xb027
  - Expire Date:** January 31, 2017

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Modification Requests

Modification Requested						
Number	Title	Description	Status	Date Submitted	Date Issued	Issued Version
1	Minor: trawl mitigation	Modifying permit to add monitoring for trawl surveys.	Issued	10/01/2014	10/28/2014	

Reports

Reports Required					
Nbr	Report Type	Report Period		Date Due	Status
		Start Date	End Date		
1	Annual	01/12/2012	12/31/2012	04/30/2013	Submitted
				04/24/2013	



2	Annual	01/01/2013	12/31/2013	04/30/2014	Submitted	04/30/2014
3	Annual	01/01/2014	12/31/2014	04/30/2015	N/A	
4	Annual	01/01/2015	12/31/2015	04/30/2016	N/A	
5	Annual	01/01/2016	01/31/2017	04/30/2017	N/A	
6	Final	01/12/2012	01/31/2017	07/31/2017	N/A	
7	Incident	09/30/2014	09/30/2014		Draft	10/06/2014
8	Incident				Draft	10/06/2014